AMENDMENTS TO THE CLAIMS

1. (Currently amended) In a wireless communication system adapted for packet data transmissions, a method comprising:

receiving a channel state indicator CSI for [[a]] each mobile station in a pool of mobile stations;

determining a tuning parameter α in the range of 0 to 1 inclusive;

calculating a projected average throughput value $\overline{R}$ for each mobile station in the pool of mobile stations as a function of the CSI;

calculating the average value $\overline{R}_{av}$ of the projected average throughput values for at least a portion of the pool of mobile stations;

calculating [[a]] respective priority ~~function~~ functions for [[the]] each mobile station as $CSI \times \left[\alpha / \overline{R} + (1-\alpha) / \overline{R}_{av} \right]$; and

scheduling transmissions to the mobile stations according to the priority functions.

2. (Original) The method of claim 1, wherein calculating the priority function further comprises calculating the priority function as a monotonic function of $CSI \times \left[\alpha / \overline{R} + (1-\alpha) / \overline{R}_{av} \right]$.

3. (Currently amended) The method of claim 1, wherein each of the channel state indicators is a requested data rate received from one of the ~~plurality~~ pool of mobile stations.

4. (Currently amended) The method of claim 1, wherein each of the channel state indicators is a carrier-to-interference ratio received from one of the ~~plurality~~ pool of mobile stations.

5. (Currently amended) The method of claim 1, further comprising transmitting data to the ~~plurality~~ pool of mobile stations in response to scheduling decisions.

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6. (Original) The method of claim 1, further comprising updating the priority functions of scheduled mobile stations as a function of the channel state indicator.

7. (Currently amended) The method of claim [[7]] 1, further comprising updating the priority functions of non-scheduled mobile stations assuming the channel state indicator is equal to zero.

8. (Original) A method for scheduling packet transmissions in a wireless communication system, comprising:

determining a pool of users;

determining a tuning parameter α in the range of 0 to 1 inclusive;

receiving channel state indicators from at least a section of the pool of users;

calculating a priority function for the section of the pool of users;

scheduling a first subset of users who have data transmissions pending from the section of the pool of users; and

updating the priority functions of the first subset of users based on the channel state indicators multiplied by a function of the tuning parameter, the average projected throughput for the first subset of users, and the average projected throughput value across all users in the section of the pool of users.

9. (Original) The method of claim 8, further comprising updating a second subset of users within the section of the pool of users different from the first subset of users using a nominal data rate of zero.

10. (Original) The method as in claim 8, wherein the section of the pool of users are users having data pending.

11. (Original) The method as in claim 10, wherein the first subset of users comprises one user.

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12. (Original) A base station apparatus, comprising:

a processor, and;

a memory module coupled to the processor, the memory module operative to store a plurality of computer readable instructions, comprising:

a first set of instructions to obtain channel state indicators CSI for the mobile stations;

a second set of instructions to determine the value of a tuning parameter α within the range of 0 to 1 inclusive;

a third set of instructions to calculate the projected average throughput value $\overline{R}$ for each mobile station as a function of the channel state indicator for that mobile;

a fourth set of instructions to calculate the average value $\overline{R}_{av}$ of the projected average throughput values $\overline{R}$;

a fifth set of instructions to calculate a priority function for the mobile stations, wherein the priority function is a function of $CSI \times \left[\alpha / \overline{R} + (1-\alpha) / \overline{R}_{av} \right]$; and

a sixth set of instructions to schedule transmissions to the mobile stations according to the priority functions.

13. (Original) The method of claim 12, wherein the instructions further comprise a seventh set of instructions to calculate the priority function further comprises calculating the priority function as a monotonic function of $CSI \times \left[\alpha / \overline{R} + (1-\alpha) / \overline{R}_{av} \right]$.

14. (Currently amended) A method for scheduling packet transmissions in a wireless communication system, wherein the wireless communications system incorporates a base station and a pool of mobile stations, the method comprising the steps of:

receiving a channel state indicator from each of plural mobile stations in the pool of mobile stations;

projecting average throughput for each of the plural mobile stations;

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finding an average of the projected average throughputs for the plural mobile stations; and

scheduling transmissions to the plural mobile stations according to a priority function for each mobile station that is dependent upon the channel state information for the mobile station, the projected average throughput for the mobile station and the average of the projected average throughputs, ~~whereby~~ to obtain a balance ~~is obtained~~ between high throughput for specific mobile stations and fairness to the plural mobile stations.

15. (Original) The method of claim 14 in which each priority function incorporates a tuning parameter α whose value varies the weight assigned to the projected average throughput for the mobile station and the average of the projected average throughputs in determining the scheduling of transmissions.

16. (Original) The method of claim 15 in which throughput of the scheduled transmissions varies linearly with the tuning parameter.

17. (Original) The method of claim 14 in which each priority function is a function of

$$CSI \times \left[\alpha / \overline{R} + (1-\alpha) / \overline{R}_{av} \right]$$

where CSI is the channel state indicator from the respective mobile station, α has a value between 0 and 1, $\overline{R}$ is a projected average throughput value for the mobile station as a function of the CSI, and $\overline{R}_{av}$ is the average of the projected average throughput values for plural mobile stations.

18. (Original) The method of claim 17 in which scheduling transmission from the plural mobile stations comprises:

scheduling a first subset of the mobile stations who have data transmissions pending; and

updating the priority functions of the plural mobile stations.

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19. (Original) The method of claim 18 in which updating the priority function of a mobile station is based on the channel state indicator of the mobile station multiplied by a function of the tuning parameter, the projected average throughput for the mobile station and the average of the projected average throughputs for the plural mobile stations.

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